[COMMITTEE PRINT]

FUTURE SPACE PROGRAMS

TRANSMITTED TO THE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

Serial C

MAY 1991

Printed for the use of the Committee on Science, Space, and Technology

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U.S. GOVERNMENT PRINTING OFFICE

43-089 WASHINGTON : 1991

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

H702-8

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LETTER OF SUBMITTAL

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, DC, May 16, 1991.

Members of the Committee on Science, Space, and Technology

Herewith I commend to you the statement prepared by Howard and Harriet Kurtz. This statement was prepared over fifteen years ago, but its foresight is as helpful today as it was then.

For one thing, they have forseen the need to launch a Mission to Planet Earth to develop an understanding of our planet's life support systems.

I am submitting this report to you as a model of the kind of broad, far-reaching thinking that we need.

Sincerely,

GEORGE E. BROWN, JR.,
Chairman.

STATEMENT BY

HOWARD & HARRIET KURTZ, WAR CONTROL PLANNERS, INC.

July 15, 1975

Memorandum of Transmittal to:

Mr. James E. Wilson, Staff Counsel
Space Science and Applications Subcommittee
Science and Technology Committee
House of Representatives - Room 2321
Washington, D.C. 20515

Subject: Statement for July, 1975 Hearings on The Future Space Programs

In response to Chairman Don Fuqua's June 5, 1975 letter we enclose herewith a paper offering our perspectives based on more than twenty years study, work, observation and writing in the field of the self-generating Kremlin/White House science and technology race.

THRUST OF THE PAPER

The purpose of the paper is to help open widest possible pro and con and creative professional, public and political discussion in what, for a generation, has been a "forbidden subject", — the development of pro-human U.S. global space power initiatives as the centerpiece for a new, and larger, and more effective U.S. foreign policy.

When Pearl Harbor caught Washington insufficiently prepared for the crisis of waging world war, the American people were saved from disaster by very large scale national investment in research, development, production and delivery of power to kill the enemy who threatened the U.S. Today the pendulum has made the full swing. Today Washington is insufficiently prepared for the far greater crisis that the Kremlin/White House arms technology competition has produced the power to destroy humanity itself.

As we once held a temporary lead in the field of nuclear technologies, the U.S. today has a temporary dominant lead in the global systems technologies and management systems and professional know-how which can be redirected toward the new American purpose of pioneering the future global systems and instrumentalities of civilized world order.

The NASA earth-orbiting, remote-sensing, communications and other pro-human applications satellites are one significant example of this American technological leadership. As President Kennedy and Congress refocused American

public attention away from the Cuban Invasion fiasco by the awesome commitment of American creativity and power to the task of making the Moon safe for human visits . . . today President Ford and Congress could re-focus world public attention away from the tidal waves of crises sweeping the planet, by a far more awesome commitment of American creativity and power for very large scale initiatives pioneering the unexplored frontiers of future global systems and institutions making Planet Earth safe for human progress everywhere.

Only this time, as we suggest in the paper, Congress may have to take the initiative.

The paper makes three general recommendations: —

1. The Subcommittee may wish to initiate a depth audio-visual and other educational program, on a very large scale, that all other Members of the House of Representatives may have a better understanding of the proven capabilities of the new and unprecedented humane satellites focusing on the Planet Earth, in contrast to focus on the mysteries of outerspace beyond a thousand, thousand suns. This educational effort should extend to the press and to the American people in every community who, in the end, must understand and support any new initiatives by the Congress.

2. The present missions and mandate of NASA should be greatly magnified with far greater leading edge responsibility for the earth-oriented satellite programs which, we suggest, should be immediately expanded to at least four or five times the present budgets and missions. NASA also should be given a continuing responsibility for long range experimental operations.

3. In order to focus world attention on the coming decade of new American national commitment to help all humanity live through world crises (as distinct from strategy based on threatening the extinction of humanity in nuclear war) Goddard Space Center in suburban Washington, D.C. is envisioned as a vast open-to-the-public research and educational and information center, more exciting to millions of tourists in the next ten years than a world's fair might be, and of increasing value to thousands of users in a world-wide educational extension service. NASA would become the centerpiece of a new departure in foreign policy, with the expanded Goddard space complex as the visible evidence.

We appreciate the opportunity to offer to you and to the Congress and the public record these few highlights from our prolonged study of the matter. We will gladly go into greater detail on any points.

Sincerely,

Howard G. Kurtz (Rev.)Harriet B. Kurtz

Enclosures

BIOGRAPHICAL BACKGROUND: Howard G. Kurtz and Harriet B. Kurtz

Mr. and Mrs. Kurtz have devoted more than twenty years to the study of escalating world crisis and the clarification of initiatives the United States can safely launch to lead the world community toward a stable world order free from want and war. In 1947 when George Kennan's "containment" paper was published on U.S. global strategy, they were studying at Columbia University's Russian Institute. Failing to find reassurance from history that the oncoming crisis could be averted, they have worked with experts in many fields searching for new means toward lasting peace and wellbeing for Planet Earth.

War Control Planners, Inc. was founded in 1963 as a vehicle for this activity and its newsletter, CHECKPOINT begun in 1968. In War Control Planners, Inc. the concern is for the national security of the United States and the national security of all nations in the way that Air Traffic Control is concerned for the safety of all airplanes flying blind in a cloud. For the first time in history, expanding global technology, management skills and professional knowledge in many fields is making it feasible to develop global systems and institutions more complex and effective than the present United Nations, capable of bringing an end to the arms race, and capable of releasing the scarce energies and resources of Planet Earth for pro-human purposes instead of producing weapons of violence and destruction. The objective is to raise this issue and secure it a place on the public agenda for discussion and action.

Howard G. Kurtz is an engineer by training, a former Lt. Col. in the U.S. Air Force, and a management consultant by profession. He graduated as a management engineer from Pennsylvania State College in 1930, having graduated from the U.S. Army Flying School as a pilot in 1929. He spent twenty-two years (1932-1954) in airline management positions in American Airlines, Inc., American Overseas Airlines, Inc., and Pan American World Airways, inc. He then spent twelve years (1954-1966) as the senior associate in the nationally known management consulting firm of Handy Associates,Inc. Since that time he has devoted full time as President of War Control Planners, Inc.

Harriet B. Kurtz graduated from Wellesley College in 1937 and Union Theological Seminary in 1962. She was ordained to the ministry by the United Church of Christ in 1964 with this mission in the field of war and global crisis as her particular charge. Since that time she has pioneered the development of this mission full time as her professional vocation

July 15, 1975

The Honorable Don Fuqua, Chairman
Subcommittee on Space Science and Applications
Science and Technology Committee
Suite 2321 Rayburn Building
Washington, D.C. 20515

Via Mr. James E. Wilson, Subcommittee Staff Director

Dear Mr. Chairman:

In response to your June 5, 1975 invitation to participate in an examination of possible future national space programs, we offer the following perspectives.

Since undertaking two years of graduate study of Soviet/American problems at Cornell and at the Russian Institute at Columbia University (1946-48) we have studied, worked, observed and written in the field of the self-generating Kremlin/White House science and technology race, now producing the power to destroy humanity. It has been our mission to work with creative persons in many professions, in search for breakthrough concepts of ways in which the relentless forward march of technology can be directed to create global systems and instrumentalities for a civilized community of nations . . . life support systems for Planet Earth, in full contrast to the present strategic military concepts of total, global, suicidal death and destruction.

We offer these views for your pro and con and creative discussion under the following subject headings:

- New Historic Eras are Built upon New Technologies
- Sample Agenda for Public and Congressional Discussion and Appraisal
- Deteriorating World Crisis
- If the White House but had an Adequate Grand Strategy
- Expanded Goddard Space Center: Window to the Future
- Highlights of Congressional Policy Questions
- National Science and Technology Policy: The Ineffectiveness of "Technology Assessment"
- The Present Ineffective Organization of Congress
- Short Circuits in the White House Power Structure
- The Question before Congress: What Kind of Future World Civilization are we Trying to Build?
- Recommendations

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NEW HISTORIC ERAS ARE BUILT UPON NEW TECHNOLOGIES

The emergence of the microscope made possible historic strides in the control of disease, and progress in public health.

The emergence of the telescope made possible the exploration of the oceans and the discovery of America.

Today the emergence of earth survey and communications satellites are making possible the development of global systems and institutions of a future civilized community of nations.

As President Roosevelt and Congress released the creativity and power of America for the "impossible" task of releasing the power of the atom (in addition to prosecuting World War II) . . . today the President and the Congress could release the creativity and power of America for the "impossible" task of creating the foundations for future civilized world order (in addition to meeting all requirements for national defense during the decade or more of advanced new research and development and testing).

As President Kennedy and Congress released the creativity and power of the American people for the "impossible" task of making the moon safe for human visits, today the President and Congress could release the creativity and power and character of the American people for the "impossible" task of making Planet Earth safe for future human progress everywhere. A key to this as we shall see may be found in future space applications programs.

But this time the initiative may have to come from the Congress.

We offer an illustrative example from the field of future space programs.

In the Executive Branch, when the Pentagon brings together panels of distinguished scientists and engineers to crystalize future space programs, naturally they envision systems to enhance the U.S. side of the ever-escalating arms and power race.

When NASA brought together panels of distinguished scientists and engineers to crystalize future space programs, naturally they have envisioned fabulous new scientific instruments and laboratories penetrating deeper and deeper into outerspace, such as the floating space telescope peering outward beyond a thousand, thousand suns in search for the theologians' mystery of life, in cold disregard for the mystery of death sweeping in tidal waves across world populations on the earth, here below.

Other panels of science fiction experts project for NASA space programs in which a few thousand chosen people will be allowed to escape the consuming crises of collapsing world civilizations, to live in computerized tranquility in a cosmic habitat, out beyond the moon and beyond the cares of the earth.

In contrast the earth-orbiting information-gathering and communicating satellites are proving to be of great value in helping world populations in their struggle for the necessities of life -- successfully to live through approaching world crises. These breakthrough capabilities, as we shall see, can become the centerpiece for a new and more successful U.S. foreign policy.

Within the Executive branch the humane satellites serving the needs of humankind tend to be the orphans of the space program budgets. If action is to come in time initiative may have to come from the Congress.

But members of the House of Representatives and of the Senate have to face the voters who are forced to pay for these space programs with what they have left after being crushed by inflation and depression and unemployment . . . have to face the voters who find no great personal rewards when an automaton loaded with instruments lands on Mars. . . have to face voters who find only momentary interest in the exchange of astronauts in space, or ballet dancers on the ground. The following pages will be exploration on a deeper "gut level" of concern as to whether the American civilization can survive as an island surrounded by collapsing, increasingly primitive world populations.

Gradually and belatedly the Congress is awakening to the fact that the American people suspect that the Executive branch is lost in world crisis now swelling beyond the will of the President . . . that obsolete U.S. foreign policy is long overdue for full public and congressional reappraisal . . . that the White House has no unified and coherent global objective and strategy to focus American science and technology policy, or to focus future U.S. space programs.

It is in this direction of unprecedented U.S. global pro-human strategic power initiatives that we invite pro and con and expansive discussion within your subcommittee, and perhaps more widely within the House of Representatives.

We are not lobbyists. We are not seeking your support for any legislation or political partisan activity. We believe that you, and all members of the Space Science and Applications Subcommittee, and the full Science and Technology Committee, are performing a crucially needed public service by opening up for public discussion the subject of future space programs. For the past generation neither the American people nor the full Congress have been allowed to explore all of the available possible alternative space programs.

SAMPLE AGENDA FOR PUBLIC AND CONGRESSIONAL DISCUSSION AND APPRAISAL

For purposes of stimulating creative professional discussion, the December 1973 issue of SPECTRUM, journal of the 160,000 members of the Institute of Electrical and Electronic Engineers (IEEE), carried the following prospectus for a large scale, long range, sustained U.S. national commitment for expanded programs of earth-serving intelligence and communications satellites . . . an extension of President Eisenhower's "Open Skies" policy now magnified a thousand times by the amazing advancements in the pertinent technologies: —

Aerospace

Scanning the earth

Can electronics make a breakthrough for peace using satellite-derived data? The technology is at hand

Proposal for a global information cooperative

The American people through their government could announce to the world a large scale, long-range, sustained commitment to build a giant open-to-the-public Global Information Cooperative linked to a greatly expanded ten year series of earth-orbiting, intelligence-gathering satellites and other global information-gathering sources. The objective of this Global Information Cooperative would be:

I. To maintain a public inventory of potential public danger for the planet, whether from threat of war, or pollution, or draught, or hurricane, or blight, or shipwreck, or any other threat to the general wellbeing of human beings everywhere, and

II. To provide earth resources development information assisting the economic progress and human wellbeing for people of all nations. All nations will be invited to cooperate as part of an eventual broader War Prevention Decade of new research and development and testing.

All nations would be invited to cooperate by assigning experts and research teams to work together in a large Global Information Research Park surrounding the Cooperative. This would include military experts, intelligence experts, agricultural experts, geologic survey experts, and specialists in all relevent fields. There would be no classified information, no secrets. Anything that can be *seen* or *detected* or *discovered* through outerspace instrumentation would be available to the people and the nations of the world.

Information would be made public on large illuminated information display walls, and would be stored in computers for reference. Communications links would be maintained with the world radio, television, and printed news and public information media. This mobilization of information research and development for the future safety and wellbeing of the people of all nations would proceed with American initiative, no matter what nations withhold cooperation at first. Nations would be free to join the cooperative at any future time.

There would be no need to first "negotiate" with potential enemies before the American people lead the people of all nations gradually toward a new age of openness. Potential enemies on both sides of all confrontations would be invited to see inside their own country what American reconnaissance satellites already see.

All nations capable of launching surveillance satellites would be invited to link them to the Global Information Cooperative. All nations would be invited to build similar open-to-the-public information centers, linked to central information receivers, and storage facilities, and retrieval facilities. All nations would be free to install receiving facilities to be linked directly to the eyes-in-the-sky.

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Howard G. Kurtz spent twenty-two years (1932-1954) in airline management positions and twelve years (1954-1966) in the management consulting firm of Handy Associates, Inc. Since 1966 he has devoted his full-time to War Control Planners, Inc., of which he is president.

Harriet B. Kurtz graduated from Wellesley College in 1937, and Union Theological Seminary in 1962. She was ordained to the ministry of the United Church of Christ in 1964, with a mission in the field of war and crisis as her particular charge.

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Vol. 10, No. 12, December, 1973, pp. 84-89
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As President Kennedy refocused American public attention away from the Cuban Invasion fiasco by the awesome commitment of American research and development to the objective of making the moon safe for human visits, today with the nations of the world overwhelmingly aligned in the United Nations against the U.S. the President and Congress could refocus world attention away from confrontations and hostilities by the awesome commitment of American space programs to pioneer global systems and structures to help the people of all nations feed their hungry, clothe their naked, shelter their shivvering, heal their sick and maintain their national security, as in the above prospectus for *A GLOBAL INFORMATION COOPERATIVE*.

Within a week after the dramatic announcement, the public and the press of the world could begin the open verification of the feasibility of this attempt to chart a new historic course for humanity. The facilities all are in being, on a small experimental scale. Goddard Space Flight Center in the Maryland suburbs of Washington, D.C. already is the creative nerve center for more than ten years of fabulous progress in this direction. But before looking more closely at the opening of Goddard Space Center as a window on a future civilized world order, it may help to look for a moment at the dire strategic background today.

DETERIORATING WORLD CRISIS

There are about 150 sovereign nations on the Planet Earth. The patriotic people of these nations — humanity as a whole — have not attached their support to either Soviet or American side of the ever-growing science and technology race producing weapons now capable of destroying all humanity.

A billion human beings face a future of starvation, pestilence, disease, disintegration, pollution, violence, agony and ugly death on a planet which has commandeered the cream of its energies and resources and human creativity to produce weapons of total death and destruction.

Hungry nations like India take scarce energies and resources away from their own dying citizens to produce nuclear weapons, trying to maintain their place in the pecking order of nations brandishing the power to ignite the final obliterating world holocaust.

As the human predicament deteriorates around the world, more and more national governments will collapse, to be taken over by more primitive political leaders . . . as in the next five years perhaps thirty of these primitive national leaders may have their fingers on the triggers of proliferated nuclear weapons. The large majority of these nations even today are hostile to the United States.

Far worse, even if the pending defense budget is <u>doubled</u> by the 94th Congress, the Pentagon no longer can stop the relentless expansion of world powers hostile to the American people. The International Institute for Strategic Studies of London in its publication *THE MILITARY BALANCE 1972-1973* comes to the scholarly conclusion that the arms race has passed the point where, now, the superpower which might launch nuclear war <u>for any reason</u>, itself would be obliterated in the ensuing holocaust.

For more than five years world powers hostile to America have been becoming increasingly confident in maneuvering the U.S. into nuclear confrontation . . . certain that the American President would not dare make good his threat of nuclear war, because he would thereby run the risk of killing off the American people and destroying the Constitution of the United States which he and all other members of the Armed Forces swore an oath to defend. Powers hostile to the U.S. are confident

that as the dust of compromise settles down each time, they will have gained marginal strategic advantage (as in the opening of the Suez Canal) while by comparison the U.S. has lost world strategic balance.

The obsolete U.S. National Security Council notions of balancing U.S. power to destroy mankind against other nations' increasing powers to destroy mankind cannot last through the next five years. American tragedy and chaos are ahead unless a bold breakthrough strategic vision can penetrate the top-secret walls of the White House command sanctuary. There is an urgency to the subject we are discussing.

We have come to the end of the age when we can increase our national security by increasing the power to kill people. But we are presently locked into a seemingly endless climb with the Russians toward higher and higher sophistication of weaponry and we dare not stop that contest lest some breakthrough or superiority by them be fatal to us, closing our options.

What we can do is: in the course of that climb toward higher weapons sophistication, we can continue to hold on with one hand to that course while at the same time we reach out with the other hand for a stronger branch that will take us in a new direction.

We can now enter upon a new age.

Great tidal waves of human relief and renewed hope for life might sweep across world populations to support either the Soviet Union or the United States, whichever superpower is capable of great vision, heightened purpose, and a long-long range commitment to the research and development and testing and evaluation of global systems and institutions of civilized world order in which the scarce energies and resources of the earth will be released to produce food, clothing, housing, clean air and water, health, education and national security for world populations held within prudent limits.

Today the United States has a fleeting dominant superiority in the global systems technologies, management skills and professional know-how, capable of providing this missing world statesmanship, pioneering the global systems to conserve humanity, in contrast to the proven capabilities to annihilate humanity.

IF THE WHITE HOUSE BUT HAD AN ADEQUATE GRAND STRATEGY

Like a successful football coach the U.S. government should maintain two different kinds of superior strategic power.

The White House needs to be directed by the Congress to (1) maintain a superior defense power to try to prevent opponents from breaking through to their goal of world dominion. But a nation, or a football team, which maintains only defense power, in time will lose the game.

In addition to meeting all requirements for national defense, the Congress should direct and insist that the Executive branch release the creativity and power and character of America to create the great and persuasive forward power to lead all confrontations gradually down the field toward a new and distant goal of civilized world order within which scarce energies and resources of the earth will be directed toward pro-human purposes.

Throughout the ages whatever people have been able to envision, eventually they have been able to create. But today, nowhere in the White House or in the Congress is there a supreme council (in addition to and separate from the National Security Council) releasing the creativity and research and development talents of America to pioneer the prototype stages of future global systems and instrumentalities of civilized world community.

The following pages explore one very large scale, long range, sustained space program to provide American initiative toward the distant goal of new institutions of lasting world peace which will warrant the loyalty and support of the patriotic people of all nations, large and small (as the passengers in all airplanes flying blind in a cloud tacitly support the institution of Air Traffic Control, committed to the safety of all passengers in all airplanes in the cloud).

EXPANDED GODDARD SPACE CENTER: WINDOW TO THE FUTURE

Goddard Space Center in the Maryland outskirts of Washington, D.C. already is the nerve center through which global remote sensing space technology data are transformed into information serving the needs of an increasing number of world-wide users.

Although thousands of creative persons in NASA and in the other government departments and agencies as well as in corporations and research centers working under contract to NASA have for more than ten years envisioned and developed the awesome and unprecedented capabilities of earth-orbiting meteorological and communications and earth resources survey and other humane applications satellites, the leadership to these new realities has eminated from the scientists, engineers and experts at Goddard.

We are suggesting now that the size and the facilities and the mission of Goddard Space Center be greatly expanded to provide the same leading edge for a new generation of all-nation, or global, research, development, testing and evaluation (and eventual shared operation with other nations) of space systems and institutions serving the common needs of all nations, large and small. This center should coordinate the facilities of other government departments and agencies dealing with space applications.

The President and Congress could focus world attention on Goddard as the coordinating center for a historic commitment of the American people to a new American purpose . . . a decade of gradual redirection of American creativity and power to the pioneering of global systems and structures to serve the basic needs of all nations for progress and independence and security.

As its function expands Goddard will be opened up to the people of the world. All work will be conducted with information which is in the public domain. No classified information or national secrets of any nation will be allowed into the new *GLOBAL INFORMATION COMPLEX*. On a large scale the activities of the new complex will with its many layers comprise a center of concern for humanity.

1. Continued Research and Development

Budgets for pro-human applications satellite development will be increased to four or five times the present modest amounts, as a validation of the American national commitment. Goddard will continue to set the forward creative pace, not

only for American research and development in this area, but for the creative people of all nations who will be invited and welcomed.

Governmental or independent research organizations of all nations will be invited to establish their own subsidiary groups of their own research centers located in or near the Goddard *GLOBAL INFORMATION COMPLEX*, to work cooperatively in joint or common new directions with the scientists, engineers and professional experts of all pertinent disciplines from all interested nations.

Facilities will be maintained to bring in experts from anywhere in the world for shorter periods of consultation.

Facilities will be maintained for representatives of scientific and professional societies in all pertinent fields, from all nations, to maintain liaison offices within the complex. Science advisors from all embassies in Washington will be welcome.

2. Storage of Scientific Information

At the present time at Goddard there is a National Space Science Data Center, where refined basic scientific information and data are stored for reference and future use for all outerspace science activities.

On a far larger scale a new *EARTH APPLICATIONS SPACE DATA CENTER* will be created to become the central reservoir of accumulated knowledge relating to space programs and applications directed toward the earth and its populations. Libraries and universities and laboratories of all nations will have access to this reservoir of knowledge, and ways will be developed to create similar satellite data centers in other regions of the planet, linked to the central information storage.

A technical information facility will be maintained to assure maximum cooperation with all other channels for the communication of technical information to scientists and engineers and professional specialists and individuals, world-wide, as an expansion of the present NASA Technical Information Facility.

3. Active Interface with Users

The breakthrough technologies to serve the needs of nations and people are of little value, until the organizations and nations and people who could use the new intelligence understand what new services are within their reach, and they learn how to make maximum utilization of the services. This involves a world-wide two-way continuous communications network (1) with the creative research center understanding the needs of potential users everywhere, and (2) the potential users everywhere learning how to take maximum advantage from the services.

This back and forth dependence upon each other will require continuing active interface and liaison between the Goddard *GLOBAL INFORMATION COMPLEX* and local governments, state governments, regional institutions, national governmental departments and agencies, universities, high schools, corporations, and individuals within the United States . . . and through proper channels with the same sectors of all other nations around the world . . . and through other channels with the pertinent structures within the United Nations and other world institutions (such as, for example, the World Court in relation to future litigation). All of these activities

are being pioneered on small budgets by NASA, by the Agency for International Development, by the Department of the Interior, by the Department of Agriculture, etc. . . . but the nations of the world have become confused and discouraged in the last year as they learned that the Office of Management and Budget in the White House was threatening to kill all budgets for future LANDSAT satellite development. The new Goddard Complex will be evidence before the world that the United States and the American people have made a long range, sustained, continuing national commitment to the welfare of humanity.

Experts and students will be brought in from other nations, sent by their own governments, to study the uses and the new techniques continually being developed. . . and experts and teachers will be sent out at the request of other governments to conduct training and education in the areas of the users.

Two-way communication will bring all complaints and inadequacies from the users around the world to the creative center at Goddard, with answers or improvements flowing back to the users.

Nations or organizations will be expected to pay their expenses and the costs of training, but policies will be developed for those deserving but unable to pay, with the provision of fellowships and other aids.

4. The Global Information Sciences Institute

Universities and institutes within all nations will be invited to assign advanced students and professors to study or to instruct at a new *GLOBAL INFORMATION SCIENCES INSTITUTE* at Goddard, and to work cooperatively with the research centers of the *GLOBAL INFORMATION COMPLEX* to both lead and follow the creative pioneering probes into future pro-human and life-supporting space systems.

5. Global Information Conference Centers

Facilities will be created at Goddard where multinational or all-nation symposia and conferences may be held at regular intervals to clarify and communicate the latest developments . . . where policy review conferences may be held among the governments of the world and the space information experts . . . where conceptual conferences can call upon participants to project the future operational requirements for as-yet-unthought-of future space projects . . . where experts in space information services for the planet may work in frequent interface with experts in many other fields of the emerging world community of nations.

6. The Public Experience

A very, very large exhibition hall and information display center will be built which might become the greatest tourist center in the world. The creative imagination of the public information professionals already translating space efforts into visual displays, if invited to offer ideas, could make the public rooms at Goddard more exciting than any world's fair.

Large and vivid audio-visual displays will give the public the vicarious experience of looking down upon mankind on the Spaceship Earth, and experiencing the almost-impossible-to-describe realities of what can be "seen" and discerned and recognized to serve the needs of humanity on the Earth below.

Large information display walls will allow the public to look (in real time or in later replay from computers) down upon events unfolding on the Planet Earth.

The press corps, with journalists from all nations, will have full access to the inflow of open-to-the-public global intelligence. Television networks and stations of the world will have direct electronic connections to the satellites in orbit, so that world events or disasters or dramatic rescues or battlefields or earthquakes or just the awesome and wonderous beauty of the Earth from space may be seen in real time on the TV screens of the world.

Students with dreams of future careers committed to making the Earth a safe and decent place to live will come to the visual experience center and may see openings for their own personal career commitments . . . taking home the preliminary literature and elementary books on sale at the *IN ORBIT BOOK STORE* connected to the looking-down-on-planet-earth public experience center.

Students at the *GLOBAL INFORMATION SCIENCES INSTITUTE* might earn tuition by answering questions from the peoples of the world moving through the exhibit and taking home a picture postcard of their own home town,anywhere, taken from outerspace.

7. New Ideas . . New Opportunities . . New Hope

Throughout the ages whatever people have been able to envision, eventually they have been able to create. The shocking new reality of modern creative research and development power is that humanity for the first time in history can create any kind of future world order it can envision, and is willing to make the massive commitment to achieve. Looking at humanity and looking at the Planet Earth from the new vantage point of instruments in outerspace, one's imagination is released to begin envisioning dozens or hundreds or thousands of new ways to help all humanity live through crises and develop unprecedented well-being, as readily as military planners can envision new ways to kill more people in less time over a greater distance.

As at first hundreds, then thousands, then millions of people encounter the personal experience sensations of the Goddard audio-visual information display complex, the creative imaginations of human beings will be released and humanity gradually will envision, and then create, the institutions, the systems, the structures, the devices, the tactics, the jobs related to a safe and decent future for humankind, trapped and forced to live on Planet Earth. There is valid reason for hope, but too few people are able to experience this reason for hope.

The great global defense/space/communications/command control and other systems teams will be put back to work on an unprecedented scale, doing what they do best . . . pioneering utterly complex global systems.

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Comment: It will be assumed from the start that all nations will be suspicious of the United States and of each other as they gather hesitantly at the Goddard Complex. It will be through years of experiment and testing and demonstration and a continuous search for checks and balances and management constraints, that gradually global systems and instrumentalities will evolve that will deserve and earn the trust of all nations and all people. The editors of ESQUIRE magazine in its December 1965 issue summarized the thrust of our projection of a *GLOBAL INFORMATION COOPERATIVE* in the words:

> The War Control Plan of Howard and Harriet Kurtz of Chappaqua, New York, is unique among arms-control proposals in that it can be started on its way without the participation of the Russians, or for that matter of any country other than the U.S. Here's how: reconnaissance satellites, seismic detection, and other scientific devices are now advanced enough to permit adequate surveillance of all countries for aggressive preparations without violating anybody's territorial sovereignty, and without access to anybody's classified information. Therefore, say the Kurtzes, let the United States take the lead in actually building such a surveillance system, inviting the world to observe how it works. Meanwhile, the U.S. need not interrupt its ordinary defense strategy in any way. Let the U.S. further take the initiative in developing a United Nations type of Command-and-Control system, open to all citizens of all nations and employing no classified information, to demonstrate that such a system could rationally direct a multi-nation fire-brigade force if any such force existed. Further steps would involve war-prevention-systems conferences, dedicated to working out political controls, so that no world authority could tyrannize over independent countries or fall under the domination of any particular nation; and multi-national war-prevention games. The Kurtzes reason the Soviet Union and even China would perceive that a Global Safety Authority, properly organized, would give them greater national security than they now enjoy as independent strategists. Then they could join up. Since right now international arms agreements are improbable because no country trusts any other country, the Kurtzes' plan would first provide something trustworthy, and then ask the military powers to think about trusting it.

HIGHLIGHTS OF CONGRESSIONAL POLICY QUESTIONS

Evaluation of the advanced global experiments so far make it clear that a long range, sustained, large scale and continuing decade of development will make it possible to maintain a public inventory of potential public danger for the entire planet . . . whether danger of hurricane . . . or danger of blight . . . or danger of drought . . . or danger of war . . . or danger of being lost at sea or on an ice-cap or in the desert . . . or danger of forest fire . . . or danger of pollution. . . and hundreds of other potential threats to the public safety and wellbeing common to the people of all nations.

Concrete Examples

1. Today in the United States the Department of Agriculture is using the LANDSAT satellites in experiments to inventory and monitor agricultural crops and lands, forests, land use changes, habitat for wildlife management. Under a new mandate from Congress the Department of Agriculture could be deployed across the world to help the agricultural research and development capabilities of all nations in their life struggles, including the new benefits from satellite intelligence.

2. Today in the United States the Army Corps of Engineers is using LANDSAT satellites in experiments to assist the National Dam Safety Program, the development of large area environmental impact statements, the management of coastal waters and tidelands, the monitoring and management of water reservoir systems in New England, and the maintenance of navigation in inland rivers. Under a new mandate from Congress the Corps of Engineers could move out across the world to help the counterpart organizations in all other governments, including the new benefits from satellite data and information.

3. Today in the United States the National Oceanic and Atmospheric Administration (NOAA) provides leadership in working with other nations on the use of satellite information for world-wide weather forecasting, for seastate forecasting, for monitoring of ocean dumping and of living marine resources, and the development of navigation charts. Under a new mandate from Congress NOAA's leadership in all-nation relations can be encouraged and increased as a pattern for other government agencies.

4. Today in the United States the Department of the Interior provides dynamic leadership in the development and use of earth-oriented satellite services through its Earth Resources Observation Service — the EROS Data Center — in Sioux Falls, S.D., where anyone from any nation may purchase some of the printout of earth resources data. This intelligence is used by the U.S. Geologic Survey to locate new oil and mineral deposits, mapping floods, monitoring strip mining, monitoring changes in land use. The EROS Data Center is forming a leading edge for the suggested new U.S. global power strategy built upon American global compassionate power capabilities. One hundred and eleven foreign nations already have purchased some of the present early-experiment ERTS images from Sioux Falls. EROS scientists themselves have traveled to other nations such as Iceland, Iran, Kenya, Turkey, Bolivia and Australia to help conduct preliminary research and to conduct early training courses and seminars in the new field of benefits from remote sensing from space.

Within the U.S. the EROS experts utilize LANDSAT information for continuing study of the growth of cities, the study of geologic faults and linements, and other geologic features of the earth providing clues for the possible discovery of

oil, gas, water and mineral resources, flood mapping, tornado damage, volcano activity, snow cover, movement of glaciers, monitoring and warnings of sea ice, and many other pro-human purposes. Under a new mandate from Congress the scientists, engineers, and experts of the U.S. Geologic Survey could be greatly increased and deployed around the world to help train and inform their counterparts in the governments of all other nations as a massive mobilization of American concern for humanity and a commitment of the American people to help other nations help themselves toward higher standards of living and health and wellbeing.

5. One small scale experiment with satellite intelligence being conducted by the Department of Agriculture is called the Large Area Crop Inventory Experiment (LACIE).

So far satellites in orbit can identify some seventeen different kinds of crops in the fields on the earth 570 miles below. Each crop (wheat, corn, soybeans, barley, etc.) gives off a different wavelength vibration, distinguished by instruments. Scientists on the ground use the same kind of instruments found in the satellite, and from the ground observations they record the distinctive wavelength patterns in the memory of computers. This information is called "ground truth".

Experimentally the satellite then senses the hundred-mile-square area of its view at any given moment. The computer on the ground in a few nanoseconds can project a visual inventory of the entire area . . . what percentage is in wheat, what percentage is in corn, etc.

Further, the basic ground truth differs for each type of crop when the crop is a seedling, when it is partially grown, when it is fully grown, and when it has passed its prime. This basic information is placed in the computer memory.

Infrared instruments in space make it possible for the computer to instantly distinguish healthy crops from blight or other crop disease, before the farmer on the ground may know he is in trouble.

Other scientific experiments from space can determine the chemical content of the soil for the entire area (acidity, salinity, etc.) feeding this basic information into the computer. It also is possible to determine the moisture content of the soil.

Through coordination of other information obtained from meteorological satellites and other information sources, long range weather forecasting by computers and men is improving.

Already it is possible to ask the computer and in reply receive a visual printout of a large area showing in percentages the proportion of the area in each different kind of crop . . . the stage of development of the crop . . . the health or blight of the crop. . . the moisture and chemical content of the soil . . . and the long range weather forecast for the area.

The Congressional policy question involved in your present hearings on future space programs begins to crystalize. Although the technologies still are experimental it is now well established that, with sufficiently large scale research and development, in the future it will be possible for a Central Agricultural Intelligence Agency to print out upon demand the full crop projection for all agricultural crops for the Planet Earth, for sixty days in advance.

Should the Soviet Union have monopoly control of this global intelligence and this power to corner the agricultural markets of the world?

or

Should the United States have monopoly control of this global intelligence and this power to corner the agricultural markets of the world?

or

Should it be United States national policy and commitment to provide leadership toward a world public service instrumentality such as *A GLOBAL INFORMATION COOPERATIVE* serving openly the wellbeing of agriculture and populations of all nations, large and small?

There are powerful elite American agribusiness interests preferring to continue to make large personal profits from selling American commodities to foreign countries, and strongly resisting the notion of a massive strategic U.S. initiative helping the people of all nations develop the know-how and know-why for maximum food production for their own needs.

6. In the near future it will be possible for a single world forest service to utilize satellite intelligence in monitoring and managing all of the forests of the world. It will be possible to spot forest fires from space even in the most remote areas. It will be possible to maintain current visual inventories of the kind and the age and the health of all the large quantities of trees. It will be possible to project future lumber shortages according to type of tree.

Congressional policy question:

Should the Soviet Union have a monopoly on the satellite intelligence to corner the world's lumber markets?

or

Should the United States have a monopoly on the satellite intelligence to corner the world's lumber markets?

or

Should U.S. space policy mandate American leadership in developing and opening up a structure like *A GLOBAL INFORMATION COMPLEX* to serve the needs of the nations of the world impartially?

7. Geologists studying enlarged images of Pakistan from the ERTS-1 located previously unrecognized faults, suggesting the possible presence of underground copper. Of nine predicted locations which were explored from this study by the Pakistan government, copper discoveries were made in four areas.

Congressional policy question:
On a planet critically short of resources and energy —

> Should the Soviet multinational communist power elite have privileged first access to this knowledge of potential underground wealth before the government of the area in question?
>
> or
>
> Should the American multinational financial power elite have privileged first access to this knowledge of potential underground wealth before the government of the area in question?
>
> or
>
> Should all nations be invited to work within the *GLOBAL INFORMATION COMPLEX* toward the future wellbeing and security and development of all nations, large and small?

There are perhaps hundreds of concrete examples like these. The multinational communist power elite dealing directly with the Kremlin, and the multinational financial power elite dealing directly with the White House, each have the same generalized long-long range objective: — dominion over, or privileged access to, all of the energies and resources of the planet for their own would-be world (political) (financial) power empires. These are the roots of a generation of hot and cold wars.

8. One last concrete example. For the past year the communications satellite ATS-6 has been in synchronous orbit over the equator beamed to Alaska, Rocky Mountain States and Appalachia. During this experiment remote villages have been in direct television and radio communication with large centers of population up to a thousand miles away. Isolated high school classes in many communities in the Rockies have been addressed simultaneously via satellite by competent specialized teachers and speakers in educational experiments which have been highly successful. Patients in Alaska far away from any doctor have received professional diagnosis and treatment because of the two-way visual contact. We saw one TV tape of a nurse in a sparsely settled part of Alaska, concerned for an Eskimo whose face had been badly damaged in an accident. She brought the patient before a laboratory TV camera, and a doctor a thousand miles away inspected the patient as the nurse moved the camera around his head, with continuous two-way radio contact among the doctor and the nurse and the patient. With sufficient large scale further research and development a new humane age may be opened up for human beings in faraway locations, everywhere, except that as of today the experimental ATS-6 satellite has been moved to a new location, and damaged persons in Alaska again are far away from a doctor.

Today this same experimental ATS-6 has been moved for an experimental year to be in synchronous orbit on the equator beamed to India and nearby areas. For one year the Indian government will direct its own educational television programs from New Delhi via satellite to millions of inhabitants of small Indian villages, for family planning courses, for personal hygiene courses, for agricultural training courses, for instructions on optimum times for planting and harvesting the crops, for literacy training programs, and many other subjects

so vital to the improvement of life for the Indian people. Centuries of almost non-existent communication with these villages suddenly have been left behind, as India has leap-frogged over the prohibitively expensive era of telegraph and telephone wires for the subcontinent, into a new future era of instant mass communications, except that a year from now the experiment will be over and the ATS-6 will be somewhere else, and India may leapfrog back again to primitive isolation of the villages.

> With world populations in anxiety and agony and hunger and illiteracy this one technological breakthrough could become perhaps the most powerful pro-human vehicle for a new era of American world statesmanship. There are massive unresolved problems to be worked through with the national governments of all nations, because in time the people of all nations will be able to receive TV and radio programs direct from such satellites. It is imperative that the full control of U.S. world policy for the use of this instrument of future world civilization be firmly in the hands of the President and the Congress, and with the complete knowledge of the American people. The continuing research and development and improvement of this global compassionate power instrument should be a matter of responsibility for all relevant departments and agencies of the U.S. government, in coordination with their counterparts in the other nations involved. But this is not the way it is working out. The persons in the Executive branch who make, or fail to make, or neglect to make sound foreign policy decisions have tended to abandon much of their responsibility for the national interest, and have turned over too much of the important relationships with the governments of the rest of the world to the "private sector" which is superior in the field of producing the satellites, but whose responsibilities to their own stockholders are not necessarily identical to the Congress's responsibility for national policy, to their constituents. This Subcommittee may be the one to raise the question of future space programs in this area and the adequacy of the White House concern for such pro-human global strategic power.

Almost overnight the future U.S. space programs centered around Washington, D.C. could become the focus of attention for anxious world populations yearning for a sign that the most powerful nation in history — the United States — had made a new strategic commitment to the future wellbeing and safety of all mankind, as a long range, firm commitment for its research and development and creativity.

NATIONAL SCIENCE AND TECHNOLOGY POLICY: THE INEFFECTIVENESS OF "TECHNOLOGY ASSESSMENT"

For centuries men sought security behind the walls of castles. Then advancing technology produced gunpowder-in-cannon, rendering the castle indefensible. The historic era began to collapse as men destroyed each others' castles through three hundred years of war.

Then men learned to stretch their vision slightly. . . to redeploy the same technologies of gunpowder-in-cannon, aimed outwards to protect each others' castles as they formed something new in history: — the nation-state. The "sovereignty" of the new nation-state was conceived to be three miles out to sea because enemy cannon at that time could shoot only two miles!

The "technology assessment" would have been that advancing technology brought about the collapse of one historic era, and simultaneously provided the foundation for the creation of a new era of history.

Today this is happening again. The generation-long Kremlin/White House ever-escalating arms race has produced the catastrophic weapons and global delivery systems rendering the nation-state indefensible. The historic era of national security has been collapsing, world-wide, for more than five years. If nuclear war today is launched by any nation, for any reason, the resulting obliterating world holocaust is apt to destroy humankind, for all practical purposes.

The imperative is long overdue for men who control allocation of resources to research and development to begin to stretch their vision slightly . . to learn to redeploy the same relentless forward march of science and technology to create something new in history: — civilized global systems and institutions for a community of nations. . . instrumentalities far more complex and more effective than the present United Nations . . . capable of protecting all nations from forces of violence and capable of releasing the creativity and power of human beings to make the Planet Earth a safe and decent place for human progress everywhere.

This exponential progress of science and technology has gone far ahead of the distinguished scholars from past eras who meet to assess the impact of the older technologies they knew upon an era which is already past. They argue brilliantly about "megadeaths" and "throw weights" and "war heads" with their computers, but they find no reason for hope that there will be a future.

Technology Assessment of the Pro-Human Satellites

As one concrete example of advanced technology to conserve human life, rather than threatening to destroy it, the NASA LANDSAT 1 and 2 warrant closer assessment.

The remote-sensing instruments of LANDSAT - 2 for instance orbit the earth every 103 minutes at an altitude of 570 miles, scanning and viewing a continuous swath across the planet 115 miles wide, transmitting these views to control centers on the ground through a stream of electronic signals. The nearly north-south orbit is synchronous with the sun, meaning that it passes over any point at the same time of day each time it passes over. (where the orbit at this moment might mean that the instruments are looking down on Washington, D.C. 103 minutes from now on the next orbit the instruments would be looking down on Chicago, Illinois, and so on further west each 103 minutes later. On the following series of orbits, the instruments would be looking down on a location about 100 miles west of Washington, D.C. and 103 minutes after that they would be looking down on a location about 100 miles

west of Chicago, etc.)

Every 18 days nearly the entire surface of the earth has been viewed and recorded permanently in the computers at Goddard Space Center, Greenbelt, Maryland, and passed on from there to other users.

These instruments monitor every nation continuously. LANDSAT - 1 has been storing this visual intelligence in NASA Data Processing Facilities for about three years at the rate of about 1,300 scenes each 115 miles by 115 miles covering 17 million square miles each week.

These satellites represent a historic breakthrough into the age of global instruments, serving all humanity for better or worse, rather than being focused on any one nation. Of all of the intimate intelligence collected from the entire globe every 18 days only 1.8% of all the collected information was from within the sovereign boundaries of the United States.

> There is a massive distortion in almost all Executive branch effectivenss studies and testimony before Congress, analysing only the values in satellite operation over American territory, less than 2% of the actual intelligence-gathering operation. . . and less than 2% of the inherent value of the satellites as instruments of an effective new U.S. global strategy supporting life, rather than threatening the end of life in nuclear war.

Behind opaque walls of top-secrecy both Soviet and American military "spy satellites" for more than seven years have been invading the privacy of each other's sovereign territory, and the sovereign territory of other nations, monitoring military and many other activities with instruments far more powerful than those on LANDSAT 1 and 2.

An assessment of even the unclassified details of these satellites tends to boggle the imagination. A few sources for further reassurance of the validity of these new global capabilities follow: —

A. After launch of the first experimental satellite ERTS-1 on July 23, 1972 the results in the laboratories of the several hundred separate investigator-scientists were so far superior to those anticipated that NASA held a one-day Symposium on "Earth Resources Technology Satellite - 1" on September 29, 1972 bringing the investigators together to report to each other. The limited edition publication containing these exciting scientific reports may well become a museum piece.

B. Although the public may have difficulty obtaining copies, Members of Congress should be able to obtain from NASA a later report called "Symposium on Significant Results Obtained from Earth Resources Technology Satellite - 1, March 5,6,7,8, & 9, 1973". This was published with color illustrations by NASA Goddard Space Center with identification number "X-650-73-127". During the five day symposium 184 scientific papers were delivered (with color slides validating their observations) with dramatic developments far exceeding those reported six months earlier. This was a preliminary technology assessment establishing the validity of the awesome future potential for this new technology, under broad headings as follows: —

- Agriculture, Forestry, & Range Resources
- Mineral Resources, Geologic Structure & Landform Surveys
- Environment Surveys
- Water Resources
- Land Use & Mapping
- Interpretation Techniques Development
- Marine Resource and Ocean Surveys
- Multidisciplinary/Regional Resources Surveys
- Miscellaneous Papers

We sat through these sessions. The creative atmosphere of the three hundred or more scientists and experts was electrifying. For the first time human beings were looking down on humanity from a Seat of Power not far from where the mythologies had claimed was where God sat. With instruments which could "see" and understand what humanity was doing all around the planet, this was not far from the mythologies of a God in the Heavens for whom 'not a sparrow will fall without His knowledge'. And this was only the first few months of this breathtaking new technological age. Would these God-sized powers be used in the future to help all humanity in the struggle for survival and progress, or would these awe-inspiring powers be used to impose the will of some tyrant elite upon world civilization? The scientists themselves were helpless to make this cosmic decision, as a generation earlier the atomic scientists were helpless to make the decisions as to the use of their technological breakthrough into the nuclear age. This is the life-and-death-for-humanity question which you and each individual member of your Subcommittee have on the table before you in these present hearings on future space programs.

Persons with special knowledge of new technological capabilities have a responsibility to see that the public is fully cognizant of the new reality. There are overwhelmingly powerful sectors connected to the Kremlin and connected to the White House which are reluctant to allow the world's public to learn that the global technologies of lasting peace and interdependence are, in fact, within reach.

C. The accelerating progress became so fantastic that another, larger symposium was called December 10, 11, 12, 13 & 14, 1973. The color-illustrated report of this creative gathering was published in four large volumes called "Third Earth Resources Technology Satellite Symposium" with identifications "NASA SP-356 (2 volumes) and NASA SP-351 (2 volumes). We are not certain there are copies left of the limited printing but the title page of the first volume (only) shows that it may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 for $3 identified as Stock Number 3300-00580.

One thing rather certain, although it may be difficult for American citizens to obtain these documents and to learn of the new U.S. global compassionate powers within reach, it is probable that the science advisors of most of the embassies in Washington from foreign nations did obtain copies which are now part of the scientific literature of their home countries.

D. In August 1974 the National Academy of Sciences published a limited edition of an outside, objective, independent technology assessment of the surprising accomplishments of the ERTS-1, and its future potentials, under the title "Remote Sensing for Resource and Environmental Surveys: A Progress Review 1974". This depth review was compiled by eight different panels of scientists in the following fields:

Biology	Geology
Cartography	Hydrology
Environmental Measurement	Oceanography
Geography	Information Management

Members of Congress faced with making policy decisions on future space programs and others interested may inquire about the availability of this document by inquiry direct to the President, National Academy of Sciences, Washington, D.C. 20418. The information is not classified. It is just kept very, very scarce for American citizens to get hold of.

E. On October 31, 1974 (updated December 20, 1974) a twelve volume technology assessment of the economic impact of the ERTS technologies was completed for NASA by ECON Incorporated, an economic consulting firm in Princeton, N.J. under title, "The Economic Value of Remote Sensing of Earth Resources from Space: An ERTS Overview, and The Value of Continuity of Service."

If the Congress should break open a historic pro and con and creative professional, public and political reappraisal of the character and the goals of U.S. national science and technology and power, and the American people should speak through their elected representatives in Congress to impress upon the Executive branch a new American purpose to assist humanity in its struggles for the necessities of life, then the whole galaxy of earth-serving American civilian and military satellites could become the leading edge for the long and difficult years of pioneering. This report casts a bright shadow of future economic assistance to all civilizations from the new satellite powers.

But as you know, for more than six months at the end of the last Congress, the Office of Management and Budget in the White House made sustained attempts to kill ALL budgets for the future development of LANDSAT - 3 and other space projects. There are mighty forces near the center of power in the White House, which are hostile to the strategic objective of civilized world order.

F. About the time of your hearings on future space programs, perhaps the most important technology assessment of the new life-saving, earth-serving satellites is scheduled to be released, again in a limited edition. It has been many months in preparation and in the writing and re-writing by the Space Applications Board of the National Research Council, Washington, D.C. 20418.

We have not seen this report. We have heard that, again, the report deals only with the value of the LANDSAT capabilities focused on the United States. As a report to Congress or as a base for congressional policy decisions about future space programs, such a report embodies a grave distortion.

As we suggested earlier, the 197,000,000 square miles of the earth's surface is scanned fully every 18 days by the experimental satellites LANDSAT 1 & 2. The 3,600,000 square miles of this surface which is the United States utilizes only 1.8% of what the satellite "sees". These orbiting instruments gather data and information of fantastic value to all land areas, and for all the ships at sea, and information for many purposes on the oceans of the world. 98.2% of this value to humanity is ignored when analyses are made of the cost-effectiveness in relation only to the United States. Because the U.S. already has such superior domestic information facilities, the economic value of the new technologies is much less important to the domestic U.S. than it could be . . . if fully developed and explored and exploited . . . to the rest of humanity and the rest of the planet.

The capabilities of these new satellites to look down upon all humanity and to invade the privacy of all nations, is so far beyond any human experience that it is almost beyond imagination. We have an audio-visual briefing which helps peop

conceptualize this new age of pro-human power, which we can make available, and which we have previewed for the Staff Counsel of your Subcommittee. It takes the viewers on an orbit around the Earth, looking down upon humanity with many of the capabilities which have been mentioned on previous pages.

THE PRESENT INEFFECTIVE ORGANIZATION OF CONGRESS

The simple, unclassified public discussion agenda published by SPECTRUM and reproduced on earler pages of this testimony entitled, "Proposal for a Global Information Cooperative" involves simultaneously not only your subcommittee which is holding the hearings, but also in the House of Representatives the

Agriculture Committee
Appropriations Committee
Armed Services Committee
Banking, Currency & Housing Committee
Budget Committee
Education & Labor Committee
International Relations Committee
Government Operations Committee
Interior & Insular Affairs Committee
Interstate & Foreign Commerce Committee
Merchant Marine & Fisheries Committee
Science & Technology Committee
Ways & Means Committee

plus all the corresponding committees in the Senate and the

Joint Atomic Energy Committee
Joint Economic Committee
Technology Assessment Board

approximately 28 committees!

For more than three years no committee has cared, or dared, open the simple subject of *A GLOBAL INFORMATION COOPERATIVE* for full exploration and discussion. No committee has the authority or the jurisdiction.

This is one concrete example of how the Congress in the past generation has neglected its responsibility to determine the character and the objectives of the sovereign power of the American people in world affairs . . . and has allowed this supreme power to be usurped by powerful elite interest groups dealing directly and privately with the White House, ignoring the elected Congress and the American people (not unlike the way in the Soviet Union the powerful elite Central Committee of the Communist Party deals directly and privately with the Kremlin, ignoring the elected Supreme Soviet and the Soviet people).

Members of your Subcommittee are in a position to have special information about the breakthrough capabilities of the many different earth-focused satellites. This special information could perhaps have a bearing upon a new American purpose to begin to develop the global systems and institutions to bring raging world crisis under future civilized control. No other committees have this information available. Your members may feel a special responsibility to open pro and con and expansive discussion among the members of all of the other committees of the House.

SHORT CIRCUITS IN THE WHITE HOUSE POWER STRUCTURE

Members of Congress tend to give the impression of being baffled and confused by the power structure which has usurped many decisions beyond the reach of Congress. Some of our personal experiences in pursuit of humane objectives for U.S. strategic power may help focus attention.

1. The Myth of "Military"vs. "Civilian" Science & Technology

An earth-orbiting satellite in space using a modern infrared sensor will be able to measure the temperature of the water on the surface of the ocean below to within a fraction of a degree. This information transmitted in real time to a control center on the ground will be vital for meteorological and seastate forecasting and for public safety at sea.

Simultaneously, the same infrared sensor in the same satellite can detect the slight change in surface water temperature of the same ocean caused by the friction between the propellor of a silent submerged nuclear-powered submarine, and the surrounding water. The slightly warmed water behind the propellor rises to the surface and leaves a faint trail of warm water behind the moving submarine. The same ground control center will be able to follow the precise path of the underwater submarine, by day or by night.

Is this orbiting infrared sensor a "military" or a "civilian" technology?

It is impossible for either the President, or the Congress, to receive adequate policy advice on science & technology from a Presidential Science Advisor, or an Office of Technology Assessment, or a National Academy of Sciences or a National Academy of Engineering, which is mandated to think only in terms of "civilian" or "non-military" science and technology. The pretense is a deception affecting the future security of the American people.

The audio-visual briefing we have developed on *A GLOBAL INFORMATION COOPERATIVE* is all unclassified, and is wholly envisioned as being a massive increase in science and technology research and development in addition to all requirements for national defense. The following letter received from the Science Advisor to the President while this paper was being written, illustrates clearly one of the many short-circuits and deceptions in the pretense of the office of "Science Advisor to the President". To have available special knowledge of the breakthrough capabilities of the earth-orbiting satellites which might become the base for a new world posture by the President and the Congress, but to choose not to so inform the President may later prove to have been a grave disservice to the President and to the country.

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

nsf

OFFICE OF THE
DIRECTOR

JUL 7 1975

Mr. and Mrs. Howard Kurtz
War Control Planners, Inc.
Box 19127
Washington, D.C. 20036

Dear Mr. and Mrs. Kurtz:

I appreciate receiving a copy of your letter of June 20 to Dr. J. David Singer in which you report the highlights of your studies in national security problems and the possibilities of a global information cooperative.

As you know, the role of Science Adviser, as presently constituted, does not extend to a consideration of matters involving national security. To the contrary, such consideration is exercised at the highest level of the Federal government by the National Security Council.

In my dual capacity as Director of the National Science Foundation and Science Adviser I do not participate in security discussions. Currently, the role of Science Adviser is being reassessed in legislation offered by the President and by Members of the Congress. A point still at issue is whether the Science Adviser should participate in the determination of national security and military policy.

In light of these facts, it appears to me that your audio-visual briefing would be of greater value and interest to the National Security Council and perhaps at a later date to the Science Adviser who will be nominated by the President pursuant to the pending legislation.

Sincerely,

H. Guyford Stever
Director

From the viewpoint of members of your subcommittee there is a closer parallel or overlap between the NASA earth-oriented satellites and the Pentagon's earth-oriented "spy satellites", than there is within NASA between the earth-oriented humane satellites on the one hand and on the other hand the "space science" satellites probing the mysteries and mystique of outer space. Closer coordination between your Subcommittee and the Subcommittee on Research and Development of the Armed Services Committee may be indicated.

2. The "Forbidden" Subject

More than two years ago we had a two hour meeting with ten top officials of NASA (including three Associate Administrators). It was a fruitful back and forth discussion of an earlier version of our audio-visual briefing on *A GLOBAL INFORMATION COOPERATIVE* except for one thing: the entire meeting has had to remain off-the-record.

It has been our experience in working with key persons in all the related departments and agencies of the Executive branch on this one subject that no person on the policy-making level dares speak out publicly within strategic concepts larger than, or more modern than, or more humane than those of Dr. Henry Kissinger or the leaders of the Office of Management and Budget . . . lest they jeopardize their future careers in government. We have worked intimately with many of the creative persons who have made possible the fabulous successes of the satellite power to help humanity live though approaching crises. . . men and women who urgently believe their work could help create a better world for their own children and for all other children on the planet . . . but they dare not say a public word beyond the mandates of the leadership of NASA, which dares not say a public word beyond the mandates of Dr. Henry Kissinger or the Office of Management and Budget.

Only the appropriate subcommittees of the Congress can elicit opinions from these persons, if they are appearing before the subcommittee and are asked specific questions by members of the subcommittee. The traditional liaison persons who appear before the subcommittee tend to be from the well-disciplined headquarters. The Congress does not receive the full perspective.

3. The White House Without a Unified and Coherent Global Objective

One reason the NASA Earth Resources Technology Satellites 1 & 2 (LANDSAT 1 & 2) have been so highly successful, while involving simultaneously the responsibilities of so many departments and agencies of the executive branch is that for more than three years policies and activities have been coordinated by the Interagency Coordination Committee for the Earth Resources Survey Program on the White House level.

The Coordination Committee has been composed of high level officials of

Department of the Interior
Department of Agriculture
Department of Commerce
Department of Defense
Department of State
Corps of Engineers
Environmental Protection Agency
National Aeronautics & Space Administration

with official observers from

Office of Management & Budget
Council on Environmental Quality
National Security Council
Agency for International Development
Department of Transportation
National Science Foundation
National Academy of Sciences
National Academy of Engineers

At any given moment today a LANDSAT satellite may be functioning within the mandated area of responsibility of ALL of these sectors of the Executive branch simultaneously.

Without strong high level policy coordination and integration the program long ago would have been a shambles.

As of this writing the Interagency Coordination Committee for the Earth Resources Survey Program no longer is in existence. Under this condition any future space programs in the pro-human field may well be a shambles. The Coordinating Committee itself was mandated by the Office of Management and Budget. The mandate has now expired. As you know, the Office of Management and Budget has a record of being strongly hostile to the humane satellite programs, having tried in the last Congress to kill ALL budgets for future LANDSAT development. It would be a grave policy mistake if the Congress does not mandate a responsibility within the Executive branch on a level higher than the Office of Management and Budget.

4. The Executive Branch Lost in World Crisis: Need for a New American Purpose

Lack of Executive leadership for the future space program is linked to the lack of Executive leadership for American science and technology, and is linked to the lack of leadership for the sovereign power of the American people in world affairs.

As further perspective we quote from the opening paragraphs of Chapter 10 of the book *GRAND STRATEGY — PRINCIPLES AND PRACTICE* by Col. John M. Collins of the Congressional Research Service, published by the Naval Institute Press in 1973:

> "Sound national security interests and objectives are the keys to effective strategies. For most of the past decade this posed some awkward problems in the United States since no interests or objectives were formally recorded by the Executive Branch during either the Kennedy or Johnson administrations. As a result, strategists in the Departments of State and Defense, and in the Joint Chiefs of Staff, were compelled to identify, interpret, and contrive their own lists from National Security Action Memorandums, private and public pronouncements of the President, and from speeches, presentations to Congress, and individual statements by other influential officials in the U.S. government. This 'do-it-yourself' system was seldom satisfactory, since it depended on too many conflicting or ambiguous utterances which were subject to irreconcilable interpretations, and thus were rendered almost meaningless by compromise."

Since that chapter was written, the same statements have applied to the administrations of Presidents Nixon and, so far, Ford.

Your present search for policy to govern future space programs has to fit somehow within an overall national policy on Science and Technology, the search for which is now under way by Chairman Olin Teague and the full Science and Technology Committee. The Joint Senate-House Technology Assessment Board for some months has been attempting to clarify the priorities for national research and development programs. Toward this end they called upon the Technology Assessment Advisory Council (a panel of distinguished scientists and experts providing technology assessment advice to the Board). At the May 22, 1975 meeting of the Technology Assessment Advisory Council the Honorable Elmer B. Staats, Comptroller General of the United States, told the Council that he had had a team working on the problem of determining the priorities for national research and development policy for more than a year, and had come to a personal conclusion that it was impossible to determine the priorities for American science and technology research and development "until we know the national goals toward which our country is committed" (from our notes taken at the meeting).

No one yet has told the Congress or the American people the still-unrevealed objective of what kind of future world order we are trying to build. Only a small elite community knows toward what long range objective the American people have been required to pay taxes, suffer and sacrifice, or toward which future space programs should be directed.

THE QUESTION BEFORE CONGRESS: WHAT KIND OF FUTURE WORLD CIVILIZATION ARE WE TRYING TO CREATE?

Grossly oversimplified, in the long-range future there may be three alternative futures for humanity on Planet Earth, if there is to be a worthwhile future at all.

FIRST ALTERNATIVE FUTURE There may eventually be a world order in which all nations have become political satellites under the shadow of Soviet global strategic power. Soviet "eye-in-the-sky" satellites will have a monopoly over the power to invade the privacy of every nation at will, to maintain their global discipline. The people of all other nations will be in continuous rebellion against the Russian people. The Russian people will be effectively pauperized to maintain their global strategic enforcement power superiority. This will be the future if U.S. science and technology development budgets are reduced in the face of real and present danger.

SECOND ALTERNATIVE FUTURE There may eventually be a world order in which all nations have become economic subsidiaries under the shadow of American global strategic power. American "eye-in-the-sky" satellites will have a monopoly over the power to invade the privacy of every nation at will, to maintain their global discipline. The people of all other nations will be in continuous rebellion against the American people. The American people will also effectively be pauperized to maintain their global strategic enforcement power superiority. This will be the future if American science and technology development is concentrated on expanding military powers of destruction and on expanding financial dominion over the economies of other nations.

THIRD ALTERNATIVE FUTURE There may eventually be a world order of global systems and institutions within which all nations find security in the community of nations, and independence and progress, and within which the scarce energies and resources of the earth are directed toward producing the necessities of life for world populations, instead of producing weapons of total, global, suicidal death and destruction. American "eye-in-the-sky" satellites and communications satellites and meteorological

satellites and other humane applications satellites (military and civilian) will be linked to their counterparts from other nations in global systems and organizations such as *A GLOBAL INFORMATION COOPERATIVE* providing intelligence to help the people of all nations in their struggle for a safe and decent future for their descendents.

The United States is losing its opportunity for world statesmanship. Today the U.S. has a dominant lead in pro-human space and other global management technologies, as once it had a dominant lead in nuclear technology. In addition to meeting all requirements for national defense the American people could be mobilized for world initiatives toward the THIRD ALTERNATIVE FUTURE. But valuable years have been lost as the Office of Management and Budget and the National Security Council staff in the White House have neglected and discouraged and blocked these compassionate power initiatives.

Soviet "spy-satellite" technology is second to ours, but it is catching up. Some American firms are seeking profits by helping the Soviet Union catch up.

The European Space Research Organization (ESRO) has recently reconstituted itself to develop satellite capabilities and launch facilities and has adopted a sizable budget.

Canada, Iran and Brazil already have ground stations for receiving data from LANDSAT and four other nations are in the process of negotiating or building such facilities.

The United Nations' Peaceful Uses of Outer Space Committee is working on a proposal for the U.N. itself to create a world facility, with regional centers, not unlike the proposal for *A GLOBAL INFORMATION COOPERATIVE* we have been making available to the White House for more than five years.

Bit by bit the United States will be forced by world public opinion to give up its civilian and military powers continuously to invade the privacy of all nations, and to make these God-sized powers available to the nations we are observing, helping struggling humanity meet its basic human needs.

In small amounts, many sectors of the Executive branch already are trying to take initiatives toward these great objectives, but always timidly lest they awaken the hostility of the Office of Management and Budget and the National Security Council.

By one definition "statesmanship" is the art of voluntarily taking a bold step in a new direction just moments before one would be clobbered for failing to take it. Why have not the White House and the Congress electrified world populations with a massive, valid, demonstrated, long range commitment of American space and other powers to the strategic objective of the THIRD ALTERNATIVE FUTURE?

One reason: The Congress has allowed control of U.S. global objectives to be usurped by elite special interests dealing privately or directly with the White House, and these special interests find wellbeing, position or personal power in the SECOND ALTERNATIVE FUTURE for world civilization, if there will be a future.

In now opening up pro and con and creative public discussion of the character of future space programs in these hearings, your subcommittee may be opening the historic public reappraisal not only of space goals, but the goals for American science and technology, and the new American purpose for expanding U.S. global strategic power of life-or-death for humanity.

For a generation the American people have never been consulted by those who determined the objectives for U.S. space programs.

RECOMMENDATIONS

The President and the Congress command greater power today than any human beings ever before have held.

In the mythology of most world religions, God-sized power means simultaneously (1) the power to destroy humanity in vengeance in the twinkling of an eye, in one hand and in the other hand (2) the power with compassion to protect and enrich life for humanity on the earth below.

In the National Security Council and Staff the President and the Congress have superior command and staff assistance in wielding the power of death for mankind. Throughout history tribes and nations have sought and found security by expanding their powers to kill the people they feared, but today . . . for the first time in history . . . this national power to kill people has become global and total and therefore suicidal. If the President should now push the button for threatened nuclear war, for any reason, he could unleash the God-sized power to destroy humanity in vengeance, and America would perish.

There must be a larger purpose for the continued relentless forward march for science and technology. The same advanced science and technology mobilized in a factory to produce bombers to kill people also can be mobilized in that same factory, using the same scientists and engineers and production experts, to produce instead transport planes to bring people and places together in new community.

In addition to meeting all requirements for national defense, the President and the Congress could unleash American creativity and power and character for a new generation of pioneering the unexplored frontiers of global compassionate power systems and institutions and the foundations for a future civilized world order, within which people and nations will find wellbeing and security by guarding the wellbeing and security of their enemies and their neighbors, as themselves, in the tradition of the world's major religious and ethical teachings.

But nowhere is there a supreme council (separate from and in addition to the National Security Council) reporting to the President and the Congress, to release the research and development and educational powers of America to help all humanity live through approaching tidal waves of world crisis. The American people, we find, are capable of greatness far beyond the obsolete vision of the elite group surrounding and isolating the President on matters of the future national security of the United States.

Members of your subcommittee have special information about the pro-human remote sensing and communications and meteorological and other applications satellites. Scarcely any other Members of Congress understand these breakthrough humane powers. The American people are almost wholly uninformed of the fantastic new capabilities for future space programs and ways in which they can be directed by U.S. initiatives toward a future for all humanity, trapped and forced to live on the Planet Earth.

We therefore suggest that you may wish to launch an unprecedented large scale audio-visual indoctrination and educational program to allow all Members of Congress to become fully aware of the new powers within their reach . . . and to allow the American people to learn fully the compassionate powers which their tax money has developed in the past generation.

Secondly we find that NASA's traditional mission and mandate are grossly inadequate. The tradition is that NASA will perform "research and development" until it can establish the feasibility of a new technology or system. At that point NASA has to drop its activity and allow some other private industry or government department to find the budgets to continue into the "operational" phase of a service.

This tradition originated while NASA was the National Advisory Committee for Aeronautics (NACA) doing advanced research and engineering in the aeronautical sciences. NACA then was forced to drop the project when a commercial aircraft manufacturer saw a way to use the development profitably.

This tradition not only is obsolete but it is dangerous and it works against the national interest, when today the future of humanity and the achievement of a unified and coherent U.S. global objective and strategy are involved. As America faces a generation of creativity and world leadership toward civilized systems for a global community of nations, space systems will have to play a leading role in this world statesmanship.

We suggest that NASA needs to have a new and larger responsibility and mandate to assume responsibility for research and development and testing and evaluation and long term experimental operation of global public safety and public service satellite systems. There will be many years of experimental operation of global systems during the long terms of breakdown testing, and examination by all the nations of the world before it can be established that the people of all nations can trust these unprecedented institutions, and until decisions are made whether such organizations will be managed by a consortium of nations, or by independent all-nation organizations, or by some structure of the United Nations, or . . . most probably . . . by a world organization far more complex and far more effective than the present United Nations.

Thirdly we suggest that you may wish to take the necessary action to transform Goddard Space Center into an expanded and creative focal point for American commitment to the public service aspects of space applications. This center should become the location for a GLOBAL INFORMATION COOPERATIVE using the products of a GLOBAL INFORMATION RESEARCH COMPLEX multiplying present research and development programs by four or five times, should provide for user education with a GLOBAL INFORMATION PUBLIC SERVICE INSTITUTE, and for public education with a very large, open-to-the-public VISUAL INFORMATION DISPLAY CENTER and related activities. Such a complex would be designed to demonstrate on a sustained basis American pro-human foreign policy interests.

We believe that the country is indebted to you and to all Members of your Subcommittee for conducting these present hearings and for opening the door at this critical time for public discussion of the future space programs and their bearing upon the future of humankind. This week you may be opening the window to this new age of pro-human world systems.

Once more it could be a matter of pride and pleasure to be an American.

Howard G. Kurtz (Rev.) Harriet B. Kurtz